PROC. ENTOMOL. SOC. WASH.
86(4), 1984, pp. 769–772

A NEW SPECIES OF *NEODAVISIA* BARNES AND McDUNNOUGH (LEPIDOPTERA: PYRALIDAE) FROM SOUTHERN TEXAS

Douglas C. Ferguson, André Blanchard, and Edward C. Knudson

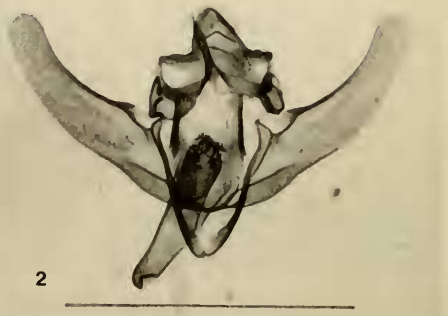
(DCF) Systematic Entomology Laboratory, IIBIII, USDA, % U.S. National Museum of Natural History, Washington, D.C. 20560; (AB) 3023 Underwood, Houston, Texas 77025; (ECK) 808 Woodstock, Bellaire, Texas 77401.

Abstract.—A new species of pyralid moth from southern Texas is assigned to the subfamily Pyralinae, tribe Endotrichini, and described as *Neodavisia* ***melusina.*** It is the second known species of this genus. The adult, genitalia, and wing venation are illustrated.

This new pyralid is described from specimens collected by the two junior authors in extreme south Texas and from additional examples collected by Dr. James E. Gillaspy at Kingsville, Texas. Its assignment to the correct subfamily, tribe, and genus presented problems because it belongs to a group that is poorly represented and poorly known in the Western Hemisphere. The distinctive hindwing venation and typically pyraline male genitalia show that it belongs somewhere in the Pyralinae. The presence of chaetosemata, even if poorly developed, the obsolescence of Rs where it closely approximates Sc in the basal half of the hindwing, and well-developed maxillary palpi preclude association with the Chrysauginae, which are the next most closely related subfamily. The male genitalia hardly differ from those of *Pyralis* L., *Herculia* Walker, and *Aglossa* Latreille, except that these genera of the tribe Pyralini always seem to have a single large cornutus in the vesica. With some reservation, we assign the new species to the tribe Endotrichini.

The Endotrichini are characterized by a well-developed tongue, the presence of maxillary palpi and chaetosemata, forewing venation with R_5 stalked with R_4 and R_3, and hindwing venation with Rs anastomosing with Sc + R (Whalley, 1961: 733), a combination with which this species seems to agree fairly well. However, R_4 of the forewing is lost, or rather fully united with R_3 so that the radius is 4-branched, unlike the 5-branched radius of most other Endotrichini. Also, Rs of the hindwing appears to be free but largely obsolescent, rather than anastomosed with Sc where they are closely parallel.

The two described American genera to which the new species is most closely related are *Neodavisia* Barnes and McDunnough (1914: 31) and *Taboga* Dyar (1914: 321), both of which are monotypic. The male genitalia of all are so alike that on that basis the three species might be regarded as congeneric. *Neodavisia singularis* (Barnes and McDunnough, 1913: 179, fig. 5) has a normal, 5-branched radius. *Taboga inis* Dyar (1914: 321) has a 4-branched radius, but a very different hindwing venation in which R and Sc meet and coalesce for a short distance beyond the cell (as in the Pyralini). The chaetosema is small but clearly apparent



Figs. 1–2. *Neodavisia melusina.* 1, Holotype male, Roma, Starr Co., Texas, 4-IV-78, A. & M. E. Blanchard. 2, Male genitalia of holotype, slide A. B. 4667, USNM slide 56,612. Line in Fig. 2 represents 1 mm.

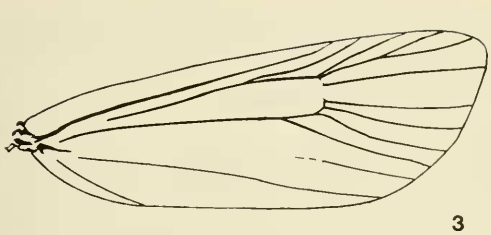
in *Taboga inis* and *Neodavisia singularis* and has about 18 bristles. That of the new species appears to be further reduced, having no more than 7–8 bristles. The new species has one unique feature that we have not seen elsewhere. The antennae of both sexes, in addition to being scaled above and ciliate beneath in the usual way, have conspicuous transverse bands of scales on the ciliate surfaces between the segments, repeated intersegmentally for most of the antennal length. These scales appear to be attached at the distal margin of each antennal segment and to overlap the base of the next segment.

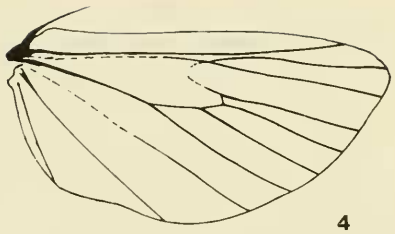
Rather than propose a new genus based on differences of uncertain significance, we think it best for the present to assign the new species to what seems the most appropriate existing genus. Despite the curious antennae and union of R_3 and R_4, it fits best in *Neodavisia.* The pattern and color are similar except for the presence of an angled, whitish antemedial band that is lacking in *N. singularis,* and a more outwardly convex postmedial band. *Taboga inis* is more gray than reddish brown, has less regular bands, and a less acute forewing. *Parachmidia fervidalis* (Walker), from the island of Hispaniola, is possibly in this group, but according to Hampson's description of the genus (1896: 495), its venation is different. No other closely related New World species have been described, but the collection of the U.S. National Museum contains old material of at least two undescribed neotropical species that may be related. The few Endotrichini that occur in the Western Hemisphere and those Pyralini that resemble them need proper revision, based on adequate material, but these moths are very rare in collections. For example, *N. singularis* was described from Florida in 1913 but is still known from no more than 10 specimens, as far as we are aware.

Neodavisia melusina Ferguson, Blanchard, & Knudson, New Species

Figs. 1–4

Head.—Front flat, smooth scaled, reddish brown. Vertex reddish brown, rough scaled with median dorsal crest or tuft of scales. Labial palpi exceeding front by 1 eye diameter, 2nd segment 1½ times length of 3rd segment, with short ventral brush. Both 2nd and 3rd segments ochreous with brownish scales laterally. First





Figs. 3–4. *Neodavisia melusina*. 3, Forewing venation of paratype, slide ECK 791 (drawing by Blanchard), Santa Ana Natl. Wildlife Refuge, Hidalgo Co., Texas, 5-IV-80, E. C. Knudson. 4, Hindwing venation of paratype, same specimen and data as for Fig. 3.

segment whitish. Maxillary palpi filiform, exceeding front by ½ eye diameter, ochreous brown. Tongue well developed. Small chaetosemata present. Antennae with basal tuft of ochreous and reddish-brown scales; shaft compressed, scaled above and finely ciliate beneath, with unusual bands of scales intersegmentally on ciliate surfaces as discussed above. Collar whitish.

Thorax.—Brownish, clothed with ochreous scales having dark-brown apices.

Abdomen.—Ochreous brown dorsally with segments 3 and 4 darker. Laterally, segments 2, 3, and 4 are dark brown with row of white scales on posterior margins. Segments 5, 6, and 7 orange brown with white posterior margins. Terminal tuft pale orange.

Wings.—Forewing smooth scaled. Most conspicuous feature is a nearly straight, oblique line just before middle of wing, running from inner margin at ⅓ distance from base to near middle of costa, and sharply dividing median space into darker brown proximal part and light-brown distal part. Forewing also with thin, white, well-defined antemedial and postmedial bands, the former acutely angled at 1st anal fold, the latter deflected outwardly opposite discal cell in a rounded convexity that almost reaches outer margin. Basal area buff to orange brown except for a few scattered dark scales and a dark-brown area between radial stem and costa, separated from paler basal area by thin, longitudinal whitish bar on radial stem; thin, whitish, basal band present but only near costa. Median space traversed by oblique, dark-brown/pale-brown interface mentioned above and marked by a small, double, dark discal spot halfway between interface and postmedial band; also shaded with dusky to reddish-brown scaling that intensifies distally toward postmedial band, beyond which wing is variably shaded with dark-brown to reddish-brown scales. First anal fold from base to apex marked by a vague, diffuse, pale orange-brown streak. Terminal line represented by an incomplete band of dark-brown scales. Hindwing a nearly uniform dusky brown except for traces of a diffuse, whitish postmedial band near and parallel to outer margin and, in female, a dash of orange in 1st anal fold just before postmedial band. Fringes of both wings light yellowish to gray brown or whitish. Underside dusky brown, faintly flushed at costa of both wings with buff in male, more extensively with red in female, and unmarked except for traces of pale postmedial bands.

Venation (Figs. 3–4).—Forewing with 4 radial veins. Sc free; R_2 from before anterior outer angle of cell; $R_3 + R_4$ completely fused; R_5 stalked with $R_3 + R_4$ for half its length; 1st A absent. Hindwing with Sc free from base; Rs in basal

half of hindwing apparently not fused with Sc but obsolescent; Rs and M_1 diverging from common point at anterior outer angle of cell; M_2 and M_3 arising separately from outer end of cell.

Length of forewing.—Males (N = 5): 4.8–5.6 mm; average, 5.1 mm. Female (N = 1): 5.8 mm.

Male genitalia (Fig. 2).—These differ from male genitalia of *N. singularis* in having shorter uncus, shorter process on gnathos, and much shorter aedeagus, which is decidedly shorter than distance from end of saccus to tip of uncus; aedeagus with numerous small cornuti near distal end; valve tapered to rounded end. In *N. singularis,* aedeagus is long and slender, at least as long as distance from end of saccus to tip of uncus, lacks the cornuti, and valve is not tapered, being about as wide toward end as near base. *Taboga inis* differs from both in having an expanded uncus, slightly constricted near its base, and a short but slender aedeagus (without cornuti). Its valve is tapered like that of *melusina.*

Female genitalia.—Papillae anales narrow, well separated, lightly setose; posterior apophyses slightly shorter than anterior apophyses; ostium bursae elongate, tubular, sclerotized; bursa copulatrix membranous, without signum.

Types.—Holotype ♂ (Figs. 1, 2), Roma, Starr County, Texas, 4 April 1978, A. & M. E. Blanchard, genitalia slide AB 4667. Paratypes: 1 ♂, Santa Ana National Wildlife Refuge, Hidalgo County, Texas, 5 April 1980, E. Knudson; 1 ♂, Kingsville, Kleberg County, Texas, 9 September 1976, J. E. Gillaspy; 1 ♂, same locality and collector, 4 July 1980, genitalia slide ECK 809; 1 ♂, same locality and collector, 13 June 1980; 1 ♀, same locality and collector, 18 June 1978, genitalia slide ECK 807. Holotype in collection of U.S. National Museum of Natural History; paratypes retained by collectors.

Literature Cited

Barnes, W. and J. H. McDunnough. 1913. Some apparently new Lepidoptera from southern Florida. Contrib. Nat. Hist. Lepid. N. Amer. 2: 166–195.

———. 1914. On the synonymy of certain Florida Lepidoptera. Canad. Entomol. 46: 27–31.

Dyar, H. G. 1914. Report on the Lepidoptera of the Smithsonian Biological Survey of the Panama Canal Zone. Proc. U.S. Nat. Mus. 47: 139–350.

Hampson, G. F. 1896. On the classification of three subfamilies of Moths of the family Pyralidae: the Epipaschiinae, Endotrichinae, and Pyralinae. Trans. Entomol. Soc. Lond. 1896: 451–550.

Whalley, P. E. S. 1961. A change in status and a redefinition of the subfamily Endotrichinae (Lep., Pyralidae), with the description of a new species. Ann. Mag. Nat. Hist. (13)3: 733–736.